

Appln. Serial No. 09/819,911

Reply to Office Action Mailed February 6, 2007

CURRENT LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

- 1 1. (Previously Presented) A method for internet protocol (IP) address selection, comprising
2 the steps of:
3 assigning a single domain name to a set of server IP addresses corresponding to plural
4 servers;
5 receiving a request for the domain name from a client IP address;
6 retrieving a set of IP routes linking the server IP addresses and the client IP address; and
7 selecting an IP route from the set of routes which meets predetermined criteria.
- 1 2. (Original) The method of claim 1 wherein the retrieving step includes the step of:
2 retrieving the set of IP routes from a cache database.
- 1 3. (Original) The method of claim 1 wherein the retrieving step includes the step of:
2 retrieving the set of IP routes from an IP routes database.
- 1 4. (Original) The method of claim 1 wherein the retrieving step includes the step of:
2 retrieving the set of IP routes from a set of routers using a BGP protocol.
- 1 5. (Original) The method of claim 1 wherein the retrieving step includes the step of:
2 retrieving the set of IP routes from a set of routers using an SNMP (MIB retrieval)
3 protocol.
- 1 6. (Original) The method of claim 1 wherein the retrieving step includes the step of:
2 retrieving the set of IP routes from a set of routers using a Telnet protocol.
- 1 7. (Original) The method of claim 1 wherein the selecting step includes the step of:
2 selecting the IP route from the set which has a shortest AS path.

Appln. Serial No. 09/819,911

Reply to Office Action Mailed February 6, 2007

- 1 8. (Original) The method of claim 1 wherein the selecting step includes the step of:
2 selecting the IP route from the set which has a lowest origin type.
- 1 9. (Original) The method of claim 1 wherein the selecting step includes the step of:
2 selecting the IP route from the set which has a lowest MED.
- 1 10. (Original) The method of claim 1 wherein the selecting step includes the step of:
2 selecting the IP route from the set equal to a default IP address.
- 1 11. (Original) The method of claim 1 further comprising the step of:
2 storing the IP routes in a cache database.
- 1 12. (Original) The method of claim 1 further comprising the step of:
2 storing the IP routes in an IP routes database.
- 1 13. (Original) The method of claim 1 further comprising the step of:
2 defining an enhanced address resource record, including a domain name, a list of
3 corresponding servers and routers, router retrieval parameters, a default client/server IP route,
4 and timeouts.
- 1 14. (Original) The method of claim 1 further comprising the step of:
2 transmitting an IP address from the set of server IP addresses which corresponds to the
3 selected IP route.

Appln. Serial No. 09/819,911

Reply to Office Action Mailed February 6, 2007

- 1 15. (Previously Presented) A computer-usable medium embodying computer program code
2 for commanding a computer to perform internet protocol address selection, comprising the steps
3 of:
4 assigning a single domain name to a set of server IP addresses corresponding to plural
5 servers;
6 receiving a request for the domain name from a client IP address;
7 retrieving a set of IP routes linking the server IP addresses and the client IP address; and
8 selecting an IP route from the set of routes which meets predetermined criteria.
- 1 16. (Original) The computer-usable medium of claim 15 wherein the retrieving step includes
2 the step of:
3 retrieving the set of IP routes from a cache database.
- 1 17. (Original) The computer-usable medium of claim 15 wherein the retrieving step includes
2 the step of:
3 retrieving the set of IP routes from a set of routers using a BGP protocol.
- 1 18. (Original) The computer-usable medium of claim 15 wherein the retrieving step includes
2 the step of:
3 retrieving the set of IP routes from a set of routers using an SNMP (MIB retrieval)
4 protocol.
- 1 19. (Original) The computer-usable medium of claim 15 wherein the retrieving step includes
2 the step of:
3 retrieving the set of IP routes from a set of routers using a Telnet protocol.
- 1 20. (Original) The computer-usable medium of claim 15 wherein the selecting step includes
2 the step of:
3 selecting the IP route from the set which has a shortest AS path.

Appln. Serial No. 09/819,911
Reply to Office Action Mailed February 6, 2007

1 21. (Original) The computer-usable medium of claim 15 wherein the selecting step includes
2 the step of:

3 selecting the IP route from the set which has a lowest origin type.

1 22. (Original) The computer-usable medium of claim 15 wherein the selecting step includes
2 the step of:

3 selecting the IP route from the set which has a lowest MED.

1 23. (Original) The computer-usable medium of claim 15 wherein the selecting step includes
2 the step of:

3 selecting the IP route from the set equal to a default IP address.

1 24. (Original) The computer-usable medium of claim 15 further comprising the step of:
2 transmitting an IP address from the set of server IP addresses which corresponds to the
3 selected IP route.

1 25. (Previously Presented) A system for internet protocol (IP) address selection comprising:

2 a set of servers, having a single domain name;

3 a client computer;

4 a set of routers, coupled to the servers and the client computer, for storing IP routes
5 between the servers and the client; and

6 a domain name system server, coupled to the routers, for downloading the IP routes from
7 the routers for storage in an IP routes database, and, in response to a query containing the domain
8 name received from the client computer, selecting one of the IP routes contained in the IP routes
9 database which meets predetermined criteria.

1 26. (Original) The system of claim 25 further comprising:

2 a cache database, coupled to the domain name system server, for storing previously
3 selected IP routes.

Appln. Serial No. 09/819,911
Reply to Office Action Mailed February 6, 2007

1 27. (Previously Presented) The system of claim 25, wherein the IP routes database is for
2 storing all of the IP routes.

1 28. (Original) The system of claim 25 wherein:
2 the domain name system server includes an enhanced address resource record storing the
3 single domain name, a list of the servers and routers, a set of router retrieval parameters, a
4 default IP route, and timeouts; and
5 the domain name system server accesses the retrieval parameters in order to select the IP
6 routes.

1 29. (Previously Presented) The method of claim 1, wherein the client IP address corresponds
2 to a client, wherein the set of IP routes comprises IP routes from the client to the respective
3 plural servers, and
4 wherein selecting the IP route comprises selecting the IP route corresponding to the
5 server that satisfies the predetermined criteria.

1 30. (Previously Presented) The method of claim 1, wherein the client IP address corresponds
2 to a client, wherein the set of IP routes comprises IP routes from the client to the respective
3 plural servers, and
4 wherein selecting the IP route comprises selecting the IP route to the server associated
5 with a shortest path from the client.

1 31. (Previously Presented) The method of claim 1, wherein the assigning, receiving,
2 retrieving, and selecting acts are performed by a domain name system (DNS) server.

1 32. (Previously Presented) The method of claim 31, wherein retrieving the set of IP routes
2 comprises retrieving a set of IP routes information relating to the IP routes, where each IP route
3 information is defined by at least two IP addresses.

Appln. Serial No. 09/819,911

Reply to Office Action Mailed February 6, 2007

1 33. (Previously Presented) The method of claim 31, further comprising:
2 prior to retrieving the set of IP routes, checking a database in a cache to find an IP route
3 entry containing an IP route previously indicated as being a best IP route; and
4 in response to finding the IP route entry in the cache, using the IP route previously
5 indicated as being the best IP route as the selected IP route.

1 34. (Previously Presented) The method of claim 33, wherein retrieving the set of IP routes is
2 performed from an IP routes database, and wherein retrieving the set of IP routes from the IP
3 routes database is in response to determining that the IP route entry is not present in the cache.

1 35. (Previously Presented) The method of claim 31, further comprising:
2 accessing a field in a record, the field to indicate one of plural techniques for
3 downloading IP routes from routers to the DNS server; and
4 based on the technique identified by the field, establishing one or more sessions with the
5 routers to download IP routes from the routers into an IP routes database in the DNS server,
6 wherein retrieving the set of IP routes is performed from the IP routes database.

1 36. (Previously Presented) The method of claim 35, wherein establishing the one or more
2 sessions with the routers comprises establishing one or more Border Gateway Protocol (BGP)
3 sessions with the routers to download IP routes from the routers into the IP routes database, in
4 response to the field indicating use of BGP retrieval.

1 37. (Previously Presented) The method of claim 36, wherein establishing the one or more
2 sessions with the routers comprises establishing one or more Simple Network Management
3 Protocol (SNMP) sessions with the routers to download IP routes from the routers into the IP
4 routes database, in response to the field indicating use of Management Information Base (MIB)
5 retrieval.

Appln. Serial No. 09/819,911
Reply to Office Action Mailed February 6, 2007

1 38. (Previously Presented) The method of claim 37, wherein establishing the one or more
2 sessions with the routers comprises establishing one or more Telnet sessions with the routers to
3 download IP routes from the routers into the IP routes database, in response to the field
4 indicating use of Telnet retrieval.

1 39. (Previously Presented) The method of claim 35, wherein establishing the one or more
2 sessions with the routers comprises establishing one of plural different types of sessions
3 corresponding to the one of plural techniques specified by the field to download IP routes from
4 the routers into the IP routes database.

1 40. (Previously Presented) The computer-usable medium of claim 15, wherein the client IP
2 address corresponds to a client, wherein the set of IP routes comprises IP routes from the client
3 to the respective plural servers, and
4 wherein selecting the IP route comprises selecting the IP route corresponding to the
5 server that satisfies the predetermined criteria.

1 41. (Previously Presented) The computer-usable medium of claim 15, wherein the client IP
2 address corresponds to a client, wherein the set of IP routes comprises IP routes from the client
3 to the respective plural servers, and
4 wherein selecting the IP route comprises selecting the IP route to the server associated
5 with a shortest path from the client.

1 42. (Previously Presented) The computer-usable medium of claim 15, wherein retrieving the
2 set of IP routes comprises retrieving a set of IP routes information, where each IP route
3 information is defined by at least two IP addresses.

1 43. (Previously Presented) The computer-usable medium of claim 15, wherein retrieving the
2 set of IP routes is performed from an IP routes database.

Appln. Serial No. 09/819,911
Reply to Office Action Mailed February 6, 2007

1 44. (Previously Presented) The computer-usable medium of claim 43, wherein the computer
2 program code commands the computer to further:
3 access a field in a record, the field to indicate one of plural techniques for downloading
4 IP routes from routers to the computer; and
5 based on the technique identified by the field, establish one or more sessions with the
6 routers to download IP routes from the routers into the IP routes database in the computer.

1 45. (Previously Presented) The computer-usable medium of claim 44, wherein establishing
2 the one or more sessions with the routers comprises establishing one or more Border Gateway
3 Protocol (BGP) sessions with the routers to download IP routes from the routers into the IP
4 routes database, in response to the field indicating use of BGP retrieval.

1 46. (Previously Presented) The computer-usable medium of claim 44, wherein establishing
2 the one or more sessions with the routers comprises establishing one or more Simple Network
3 Management Protocol (SNMP) sessions with the routers to download IP routes from the routers
4 into the IP routes database, in response to the field indicating use of Management Information
5 Base (MIB) retrieval.

1 47. (Previously Presented) The computer-usable medium of claim 44, wherein establishing
2 the one or more sessions with the routers comprises establishing one or more Telnet sessions
3 with the routers to download IP routes from the routers into the IP routes database, in response to
4 the field indicating use of Telnet retrieval.

1 48. (Previously Presented) The computer-usable medium of claim 44, wherein establishing
2 the one or more sessions with the routers comprises establishing one of plural different types of
3 sessions corresponding to the one of plural techniques specified by the field to download IP
4 routes from the routers into the IP routes database.

Appln. Serial No. 09/819,911

Reply to Office Action Mailed February 6, 2007

1 49. (Previously Presented) The system of claim 25, wherein the domain name system server
2 is adapted to:

3 access a record containing a field that specifies use of plural techniques for establishing
4 sessions with the routers for downloading the IP routes; and
5 establishing one of plural different types of sessions corresponding to the one of plural
6 techniques specified by the field to download the IP routes from the routers into the IP routes
7 database.

1 50. (Previously Presented) The system of claim 49, wherein the plural different types of
2 sessions comprise Border Gateway Protocol (BGP) sessions, Simple Network Management
3 Protocol (SNMP) sessions, and Telnet sessions.

1 51. (Previously Presented) The system of claim 25, wherein the domain name system server
2 selects the IP routes corresponding to the server that satisfies the predetermined criteria.

1 52. (Previously Presented) The system of claim 25, wherein the domain name system server
2 selects the IP route to the server with a shortest path from the client computer, the predetermined
3 criteria comprising a shortest path criterion.

1 53. (Previously Presented) The system of claim 25, wherein the set of servers having the
2 single domain name are associated with plural respective server IP addresses, wherein the client
3 has a client IP address, and
4 wherein the IP routes downloaded to the IP routes database are defined by the client IP
5 address and the plural respective server IP addresses.